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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/923,810	08/08/2001	Sok Joo Lee	049128-5025	9929
9629	7590	01/30/2006	EXAMINER SEFER, AHMED N	
MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004			ART UNIT 2826	
PAPER NUMBER				

DATE MAILED: 01/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/923,810

Applicant(s)

LEE ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 and 8-20 is/are pending in the application.
- 4a) Of the above claim(s) 8-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 15-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/29/05 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahn et al. (“Ahn”) USPN 6,259,119.

Ahn discloses (fig. 7 and col. 7, lines 49-67) a liquid crystal display device, wherein gate conductive lines are in direct contact with a transparent electrode 165, each of the gate conductive lines comprising a first metal layer including an aluminum-alloy 117a (as in claim 2) formed from a first metal; and an alloy layer 199 formed from an alloy of the first metal and

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another metal including molybdenum (as in claim 5) being disposed at an upper portion of the first metal layer.

As for claim 4, Ahn discloses an alloy layer formed from an alloy including a first metal and a second metal deposited onto the first metal layer.

As to the heat generated alloy layer or subsequent removal of the second metal recited in claims 1 and 4 respectively, they read to a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

As for claim 6, Ahn discloses said gate conductive line including one of a gate pad 117, gate line 115 and a gate electrode 113.

4. Claims 15-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ahn.

Ahn discloses (fig. 7 and col. 7, lines 49-67) a liquid crystal display device, comprising: a substrate 111; a gate electrode 113 disposed on the substrate; a gate pad 117 disposed on the substrate; an insulating film 119 disposed on the gate electrode and the gate pad; an active layer 121 disposed on the insulating film above the gate electrode; an ohmic contact layer 123 disposed on portions of the active layer; a source electrode 133 and a drain electrode 143 disposed on the ohmic contact layer; a passivation layer 139 disposed on the source and drain electrodes or disposed on the insulating layer (as in claim 19), covering side surfaces of the source and drain electrodes (as in claim 18) or contacting a portion of the active layer between

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the source and drain electrodes (as in claim 20); a pixel electrode 153 disposed on the passivation layer and contacting the drain electrode; and a transparent electrode 165 disposed on the passivation layer or disposed within a via formed through the passivation layer and insulating film (as in claim 17) contacting the gate pad or a second layer of the gate pad (as in claim 16), wherein the gate electrode and the gate pad both include a first layer formed of a first metal 117a and a second layer 199 formed of an alloy of the first metal and a second metal disposed at an entire upper surface of the first layer directly contacting the transparent electrode.

As to the heat generated alloy recited in claim 15, it reads to a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. ("Song") US PG-Pub 20020130324 in view of Miyagawa et al. ("Miyagawa") JP 10-199827.

Song discloses (see figs. 4, 11, 19B and pars. 0079, 0093 and 0111) a liquid crystal display device, wherein gate conductive lines are in direct contact with a transparent electrode 67, each of the gate conductive lines comprising a first metal layer having a thickness with the range recited in the claim (as in claim 3) including an aluminum-alloy (as in claim 2) formed from a first metal; and an alloy layer formed from an alloy and another metal including molybdenum (as in claim 5) being disposed at an upper portion of the first metal layer, but lacks anticipation of an alloy layer formed from an alloy of the first metal and another metal.

Miyagawa discloses in fig. 1 a gate conductive line comprising a first metal 2a including an aluminum-alloy formed from a first metal; and an alloy layer 2b formed from an alloy of the first metal and another metal being disposed at an upper portion of the first metal layer.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Song's device by incorporating an alloy layer formed from an alloy of the first metal and another metal being disposed at an upper portion of the first metal layer since that would provide a low resistant characteristic as taught by Miyagawa.

As for claim 4, Miyagawa discloses an alloy layer formed from an alloy including a first metal and a second metal deposited onto the first metal layer.

As to the heat generated alloy layer or subsequent removal of the second metal recited in claims 1 and 4 respectively, they read to a process and "product by process" claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685 and *In re Thorpe*, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a

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device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

As for claim 6, Song discloses said gate conductive line including one of a gate pad 24, gate line 22 and a gate electrode 26.

7. Claims 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeong et al. ("Jeong") USPN 6,081,308 in view of Miyagawa.

Jeong discloses in figs. 11-25 a liquid crystal display device, comprising: a substrate; a gate electrode 210 disposed on the substrate; a gate pad 220 disposed on the substrate; an insulating film 26/300 disposed on the gate electrode and the gate pad; an active layer 28/ 400 disposed on the insulating film above the gate electrode; an ohmic contact layer 30/510/520 disposed on portions of the active layer; a source electrode 32a/610 and a drain electrode 32b/620 disposed on the ohmic contact layer; a passivation layer 34/700 disposed on the source and drain electrodes or disposed on the insulating layer (as in claim 19), covering side surfaces of the source and drain electrodes (as in claim 18) or contacting a portion of the active layer between the source and drain electrodes (as in claim 20); a pixel electrode 36/800 disposed on the passivation layer and contacting the drain electrode; and a transparent electrode 36a/810 disposed on the passivation layer or disposed within a via formed through the passivation layer and insulating film (as in claim 17) contacting the gate pad or a second layer of the gate pad (as in claim 16), wherein the gate electrode and the gate pad both include a first layer formed of a first metal 24/221 and a second layer 26/222 formed disposed at an entire upper surface of the first layer directly contacting the transparent electrode, but lacks anticipation of a second layer formed of an alloy of the first metal and a second metal.

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Miyagawa discloses in fig. 1 a gate conductive line comprising a first metal 2a including an aluminum-alloy formed from a first metal; and an alloy layer 2b formed from an alloy of the first metal and another metal being disposed at an upper portion of the first metal layer.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Jeong's device by incorporating an alloy layer formed from an alloy of the first metal and another metal being disposed at an upper portion of the first metal layer since that would provide a low resistant characteristic as taught by Miyagawa.

As to the heat generated alloy recited in claim 15, it reads to a process and "product by process" claims are directed to the product per se, no matter how actually made, In re Hirao, 190 USPQ 15 at 17 (footnote 3). See also In re Brown, 173 USPQ 685 and In re Thorpe, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS  
January 22, 2006

NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
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